



# Common Sorting Algorithms

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## 1. Introduction

- Three common (and easy to implement) sorting algorithms are: Quick Sort, Bubble Sort, and Selection Sort.
- Average time complexities:
  - Quick Sort:  $O(n \log n)$
  - Bubble Sort:  $O(n^2)$
  - Selection Sort:  $O(n^2)$
- Big-O notation: Upper bound growth rate of a function.
- Quick Sort: Divide-and-conquer; recursively sort left and right sublists.
- Bubble Sort: Compares adjacent values and swaps them if necessary.
- Selection Sort: Divides list into two sublists: sorted and unsorted. Smallest value of the unsorted sublist is added to the end of the sorted sublist.

## 2. Methods

- Each algorithm sorts identical, randomly created arrays.

## 3. Results